

FIVE NEW SPECIES OF *ACRULOGONIA* LEAFHOPPERS (HOMOPTERA: CICADELLIDAE) FROM COLOMBIA¹

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ABSTRACT: Five new species are added to the genus *Acrulogonia* from Colombia; *A. acuta*, *A. undulata*, *A. forficata*, *A. obtusa*, and *A. lobata*. A key to the congeneric males from Colombia is included.

KEY WORDS: *Acrulogonia*, new species, Homoptera, Cicadellidae, Cicadellinae, Colombia

The genus *Acrulogonia* was described by Young (1977) in his revision of the Cicadellini of the New World. Included at that time were 11 species, 2 from southern Central America and 9 from northern South America. Godoy and Nielson (2000) added two more species from Central America. Four of the species are known from Colombia: *A. chocona* Young, *A. defectiva* Young, *A. ordinaria* Young and *A. sparsa* Young (Freytag and Sharkey, 2002). In this paper, five new species are described from recent collections in Colombia.

Most species are about the same size (5.5 to 8.5 mm) and with a similar color pattern, shared with the genus *Oragua*. The two genera are separated by *Acrulogonia* having the male pygofer bifurcate at apex and the aedeagus tubular and with processes at apex. In *Oragua* the male pygofer is not bifurcate and the aedeagus is small and usually without apical processes. Also, the females of the two genera are similar; in *Acrulogonia* the seventh sternum is enlarged with a median posterior notch, and in *Oragua* it is not enlarged and with a median posterior acute process. For the reasons above both sexes are fairly easy to identify to genus, but usually only the males differ enough to separate individuals to species. Females are identified mostly by association with males collected from the same locality. Associations may be incorrect as several species can occur in the same locality. All types of the species described in this paper are deposited in the collection of the Instituto von Humboldt, Villa de Leyva, Colombia.

Key to the species of *Acrulogonia* (males only) from Colombia

1. Pygofer rounded or short2
- 1'. Pygofer longer and narrowing to apex, which has a hook or spine dorsad and a thin lobe ventrad (Fig. 1) 3
2. Pygofer rounded in lateral view; aedeagus curved dorsad, with lobe-like processes at apex*A. defectiva* Young
- 2'. Pygofer short, with a short dorsal caudal process; aedeagus curved ventrad, with long ventral processes.....*A. sparsa* Young

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3. Aedeagus without a dorsal single process4
 3'. Aedeagus with a dorsal single process (Figs. 2-3)5
4. Aedeagus with a pair of lateral basal processes, branched at apex*A. chocona* Young
 4'. Aedeagus with a pair of lateral medial processes, not branched*A. ordinaria* Young
5. Aedeagus with two pairs of processes (Fig. 12).....6
 5'. Aedeagus with one pair of processes (Fig. 3).....7
6. Aedeagus with all processes short, stout (Fig. 12).....*A. obtusa* n. sp.
 6'. Aedeagus with one pair of processes elongate (Fig. 15)*A. lobata* n. sp.
7. Aedeagus with apical pair of processes narrow, curving ventrad (Figs. 2-3)*A. acuta* n. sp.
 7'. Aedeagus with apical pair of processes thicker (Figs. 6 and 9)..... 8
8. Aedeagus with apical pair of processes close to shaft, sinuate (Figs. 5 and 6)...*A. undulata* n. sp.
 8'. Aedeagus with apical pair of processes fork-like (Figs. 8-9).....*A. forcicata* n. sp.

Acrulogonia acuta NEW SPECIES

(Figures 1-3)

Description: Length of male 6.4 mm, females unknown. Similar to *A. fuscinula*, but smaller and with different male genitalia. Male genitalia: Pygofer (Fig. 1) narrowing to nearly pointed apex, with hook-like process on dorsal subapical margin. Plates short, narrow, two-thirds length of pygofer. Style and connective similar to *A. fuscinula*. Aedeagus (Figs. 2-3) tubular, stout, with a single median dorsal process, and a pair of lateral apical processes extending beyond apex of shaft and bent ventrad.

Type Data: Holotype male, Colombia: Vaupés, R.N. Mosiro-Itajura (Caparú), Centro Ambiental, 1°04'S 69°31'W, 60 m., Red, 20-I-1-II-2003, M. Sharkey and D. Arias, M-3387.

Differential Diagnosis: This species is close to *A. fuscinula* but is smaller and does not have the pygofer process bifurcate and has a stout aedeagus with the dorsal process closer to the middle of the shaft.

Acrulogonia undulata NEW SPECIES

(Figures 4-6)

Description: Length of males 5.9-6.1 mm, females 5.9-6 mm. Similar to *A. fuscinula*, but smaller and with different male genitalia. Male genitalia: Pygofer (Fig. 4) narrowing to a hooked apex, with a small ventral apical lobe beneath hooked apex. Plates short, half length of pygofer, narrow. Style and connective similar to *A. fuscinula*. Aedeagus (Figs. 5-6) tubular, bent dorsad near middle of shaft, with a single dorsal process near apex and a pair of lateral apical processes extending just beyond apex of shaft.

Type Data: Holotype male, Colombia: Putumayo, PNN La Paya, Cabaña La Paya, 0°07'S 74°56'W, 320 m., 1-15-XII-2001, Malaise, E. Lozano. M-2795. Paratypes: Two males same data as holotype.

Additional Specimens: Other specimens studied are as follows: one male and one female, same data as holotype, except 1-15-XI-2001, M-2439; one male, same data, except Bocana Mamansoya, 23-IX-2001, Red, M-2092; one female, same data, except Salo Grande, 0°01'S 74°56'W, 330 m., 22-IX-2001, Red, M-2087; one male, same data, except Fca. Charapa, 0°08'S 74°57'W, 330 m., 15-30-X-2001, Malaise, R. Cobete, M-2436; one male, same data, except 26-III-10-IV-2002, Malaise, M-3135; one male, same data, except 12-27IV-2002, M-3147; one male, same data, except, Cabaña Viviano Cocha, 0°07'S 74°56'W, 320 m., Malaise, A. Morales, 1-30-VII-2002, M-3314; one male, same data, except Ressuardo Cecilio Cocha, 0°11'S 74°55'W, 190 m., Malaise, 20-24-I-2003, C. Sermiento, M-3419; and one male, same data, except La Nueva Paya, 0°02'S 75°12'W, 210 m., Malaise, 31-I-3-II-2003, M-3423. All specimens are deposited in the Instituto von Humboldt Collection.

Differential Diagnosis: This species is close to *A. fuscinula* but is smaller and differs in the shape of the pygofer, and the shaft of the aedeagus being stout and bent near the middle of the shaft.

Acrulogonia forficata NEW SPECIES

(Figures 7-9)

Description: Length of male 6.5 mm, females unknown. Similar to *A. fuscinula*, but with different male genitalia. Male genitalia: Pygofer (Fig. 7) narrowing to an apex which has a small hook dorsally and a small lobe ventrally. Plate narrow, short, about two-thirds length of pygofer. Style and connective similar to *A. fuscinula*. Aedeagus (Figs. 8-9) short, stout, gradually curving to apex, with a single median subapical process and a pair of stout lateral apical processes extending beyond apex of shaft.

Type Data: Holotype male, Colombia: Caquetá, Santa Rosita, 1°20'N 76°6'W, 600 m., 22-VII-4-VIII-2000, Malaise, F. Ruales, M-1116

Differential Diagnosis: This species is close to *A. fuscinula* but differs in the shape of the pygofer, and the large apical processes of the aedeagus.

Acrulogonia obtusa NEW SPECIES

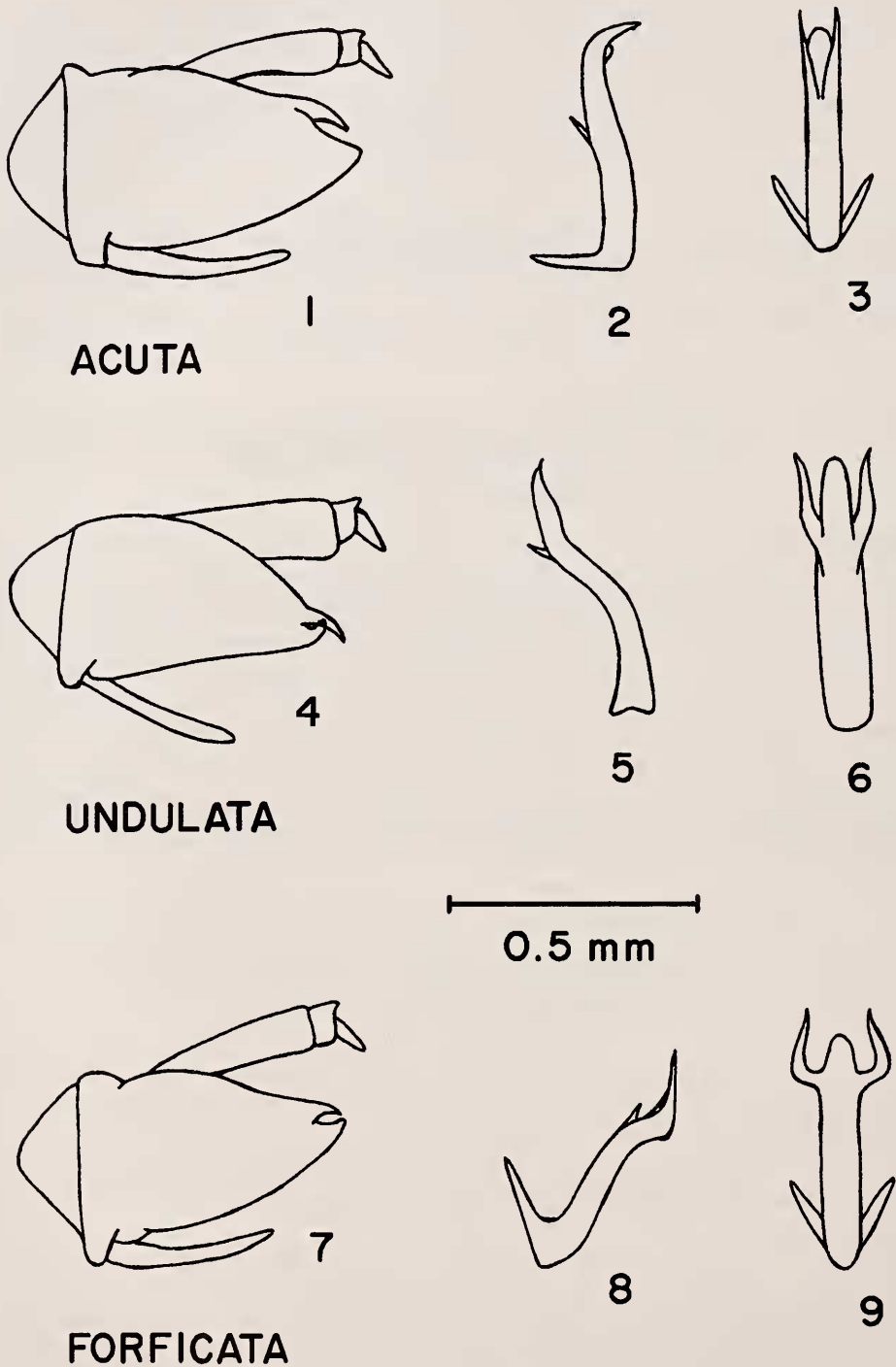
(Figures 10-12)

Description: Length of males 6.1-6.6 mm, females 6.2 mm. Similar to *A. resima*, but with different male genitalia. Male genitalia: Pygofer (Fig. 10) narrowing to a prolonged dorsal process with a ventral narrow lobe beneath. Plate narrow, short, less than half length of pygofer. Style and connective similar to *A. resima*. Aedeagus (Figs. 11-12) straight, tubular, with expanded apex bearing a short single dorsal process and a pair of lateral short slender processes as well as a pair of lateral ventral short stout processes.

Type Data: Holotype male, Colombia: Vaupés, R.N. Mosiro-Itajura (Caparú), Centro Ambiental, 1°04'S 69°31'W, 60 m., FIT, 20-I-1-II-2003, M. Sharkey and D. Arias, M-3388.

Additional Specimens: One male, 2 females, Colombia: Caquetá, PNN Chiribiquete, Cunare-Amu, 0°12'N 72°25'W, 300 m., 14-17-II-2001, Malaise, M. Ospina and E. González; one male, same data, except 19-22-II-2001; one male same data, except 23-26-II-2001; one male same data, except 28-III-3-IV-2001; one male same data, except Rio Cunare, 0°32'N 72°37'W, 300 m., 15-19-XI-2000, Malaise, E. González and M. Ospina; one male, same data, except 1-5-XI-2000; one male, same data, except Puerto Abeja, 0°04'N 72°26'W, 250 m., 29-X-12-XI-2000, Malaise, J. Forero, M-955; and one male, same data, except 12-26-XI-2000, M-956. All specimens are deposited in the Instituto von Humboldt Collection.

Differential Diagnosis: This species differs from *A. resima* in having a different pygofer apex, and an aedeagus with shorter, more apical processes.



Figures 1-3. *Acrulogonia acuta* n. sp. Fig. 1. Male genital capsule, lateral view. Fig. 2. Aedeagus, lateral view. Fig. 3. Aedeagus, ventral view. Figures 4-6. *A. undulata* n. sp. Fig. 4. Male genital capsule, lateral view. Fig. 5. Aedeagus, lateral view. Fig. 6. Aedeagus, ventral view. Figures 7-9. *A. forcicata* n. sp. Fig. 7. Male genital capsule, lateral view. Fig. 8. Aedeagus, lateral view. Fig. 9. Aedeagus, ventral view. All drawn to the same scale.

Type Data: Holotype male, Colombia: Amazonas, PNN Amacayacu, Cabaña Lorena, 3°00'S 69°59'W, 210 m., 27-VIII-2001, Red, D. Campos, M-2234. Paratypes: Four males and five females, same data as holotype.

Additional Specimens: Other specimens seen are as follows: seventeen males and seventeen females, same data as holotype; and three females, same data as holotype, except 31-VIII-2001, pan trap, M-2204. All specimens are deposited in the Instituto von Humboldt Collection and the University of Kentucky Collection.

Differential Diagnosis: This species differs from *A. resima* in having a different apex on the pygofer, and a similar type of aedeagus, except the lateral processes are not bifurcate and the ventral pair are thicker.

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